# REMARKS

Reconsideration and allowance are respectfully requested.

Claims 17-19, 23-27, 31 and 32 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,801,665 (ATSUMI). Independent claims 17 and 25 have been amended in order to further distinguish the present invention from ATSUMI. Similar to the amendment to claims 1 and 9 in the response filed September 11, 2007, currently amended claims 17 and 25 now include the limitation that the computer system, or method, comprises selecting a variable from the data set such that a high rate of change of the variable indicates the regions of interest and a low rate of change of the variable indicates the regions of lesser interest. Basis for this amendment can be found at Page 6 lines 3-10 and 18-23.

As argued in the response filed September 11, 2007, to which the Examiner agreed, as reflected on Page 2 of the November 27, 2007 action, ATSUMI et al. fails to teach or disclose an apparatus automatically selecting a variable as well as an apparatus relating the regions of interest to a region with a high rate of change of the variable. Thus, from the reasons mentioned above, claims 17 and 25 are believed novel and inventive over ATSUMI et al. Furthermore, claims 18-24 and 26-32 are believed allowable by virtue of their dependency upon currently amended claim 17 or 25.

Claims 1-4, 7, 9, 12, 15, 16, 20 and 28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over ATSUMI et al. in view of U.S. Publication 2001/0040997 (TSAP et al.).

Independent claim 1 of the present invention provides a computer system programmed to process a large data set, by applying a data compression technique, in order to furnish high fidelity in regions of interest and lower fidelity in regions of lesser interest. The computer system comprises means to select a variable from the data set wherein the rate of change of the variable indicates whether a given region is a region of interest. Independent claim 9 claims a similar method. Currently amended claims 17 and 25 provide a similar computer

system and method without the means for analyzing the data set before applying the data compression technique.

ATSUMI et al. (US 6801665) discloses a method and apparatus for encoding digital image data and transmitting it over communication lines (See Abstract). The user must identify the regions of interest and plug those regions into the system during the beginning, or in the middle, of the encoding process (Column 4 lines 55-60. After the user identifies the regions of interest, the apparatus modifies its encoder outputs so as to place more emphasis on the regions of interest and thereby increase the speed and/or fidelity of the image in that region of interest (See Abstract). Thus, ATSUMI et al. fails to teach or disclose an apparatus or method that automatically selects a variable and relates the regions of interest to a region with a high rate of change of the variable. It should be noted ATSUMI et al. relies on the user to select a region of interest (Column 4 lines 56-57). From the arguments presented above, the present invention is believed novel and inventive over ATSUMI et al. by virtue of "means to select a variable such that a high rate of change of the variable indicates the region of interest and a low rate of change of the variable indicates the regions of lesser interest" as claimed in independent claims 1, 9, 17 and 25.

TSAP discloses a system and method of recovering material properties of non-rigid objects including skin, tissue, rubber and plastic (Page 1 paragraph 2). The method involves (1) obtaining 3-Dimensional point correspondence of the object in both an unstressed and stressed state, (2) utilizing the info in step (1) to generate a strain based finite element model (FEM) of the body of the object with initial material properties and generating a finite element strain distribution, (3) detecting abnormal areas of the body by comparing initial properties with finite element strain distribution, and (4) determining at least one material property of the abnormal areas (Page 1 paragraph 4). TSAP et al. is concerned with assessing burn scars on human skin, natural and man-made elastic materials and human hand modeling (Page 1 paragraph 6). The model of TSAP et al. uses a first mesh on the object, i.e. skin, in a first "unstressed" position and uses that to predict the "stressed" position of the skin after a displacement force has

been applied (Page 2 paragraph 20). The predicted points are compared to the actual points following displacement and the FEM refined by iteration until a "global minimum" error is found between the predicted and actual measurements (Page 2 paragraph 24). The aforesaid method is used to extrapolate the material properties of the non-rigid object or human skin. It should be noted this method would not work for a rigid object since it would not deform.

The Examiner states TSAP et al. discloses means to select a variable from the data set such that a high rate of change of the variable indicates regions of interest and a low rate of change of the variable indicates regions of lesser interest at Page 4 paragraph 44 (E = change in stress/change in strain) and at Page 5 paragraph 47 (G = deformation gradient matrix). However, as reflected in step 310 (illustrated in Figure 3), the method of TSAP et al. searches for areas of lowest strain (Page 5 paragraph 55). This area of lowest strain is not an area that exhibits a high rate of change, as required in claims 1, 9, 17, 25 and 33-36, and high strain, as required in new claims 33-36. Furthermore, a low strain does not require a "rapid change in the stress field" as required in claims 4, 12, 20, 28 and new claims 33-36.

It should be noted TSAP et al. fails to teach or disclose any data compression. An area of the original data from the body of an object is selected and analysis is performed on that area only. This differs from the computer system and method of the present invention in that all the data of the object is processed, but high fidelity is performed in areas of interest and low fidelity is performed in areas of low interest. Furthermore, TSAP et al. does not disclose a 4-Dimensional data set, as claimed in claim 5, but discloses comparison of predicted and actual 3-Dimensional data after stressing of the non-rigid object.

Thus, from the reasons provided above, the combination of ATSUMI et al. and TSAP et al. fails to obtain the present invention as currently claimed and it would therefore the present invention is believed unobvious and inventive over the combination of the prior art.

Claims 8 and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over ATSUMI et al. in view of TSAP et al. and in further view of

U.S. Patent 5,490,221 (RANSFORD et al.). ATSUMI et al. together with TSAP et al. fail to disclose all the features of claim 1 as pointed out in the above arguments. The Examiner states RANSFORD et al. discloses analyzing a 4-Dimensional data set and cites Figure 2 – 20 and 22 as basis for the argument. Since RANSFORD et al. does not have Figures 11-20 and 22, as alleged by the Examiner, it is unclear which part of RANSFORD et al. the Examiner meant to refer.

As stated in the previous response filed September 11, 2007, RANSFORD et al. discloses a method for processing digital data including compression of data images, such as those in an X-ray. RANSFORD et al. is directed to medical and teleradiological fields in that a person's image is modeled upon a 3-Dimensional model which is registered with a modeled reference image obtained from modeling a standard reference image. The modeled reference image is differenced from the subject's image to form a differenced image which identifies the region of interest i.e. fractures and/or breaks of bones (Column 4 lines 45-61). RANSFORD et al. fails to teach or disclose analyzing a 4-Dimensional data set as suggested by the Examiner. It would not be obvious to include a 4th dimension, which is usually time, in RANSFORD et al. since this would substantially increase the quantity of data to process and compress, by an order of magnitude. This suggestion actually increases the problem faced by an order of magnitude as well. Therefore, RANSFORD et al. fails to teach or disclose a method of analyzing a 4-Dimensional data set as suggested by the Examiner. Accordingly, the present invention would not be obtained by the combination of ATSUMI et al, TSAP et al. and RANSFORD et al. and the present invention is believed non-obvious and inventive over the prior art.

Claims 21 and 29 stand rejected under 35 U.S.C. 103(a) as being unpatentable over ATSUMI et al. in view of RANSFORD et al. For reasons indicated in the above paragraph, the combination of ATSUMI et al. and RANSFORD et al. fail to teach or suggest the present invention as currently claimed.

Claims 6 and 14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over ATSUMI et al. in view of TSAP et al. and in further view of U.S. Patent 6,499,350 (BOARD et al.). As pointed out in the above arguments, ATSUMI et al. and TSAP et al. fail to teach all the limitations claimed in claim 1. The Examiner states BOARD et al. discloses analyzing the data set of a fan blade containment analysis of a casing when a fan blade impacts a foreign object during use at Column 3 lines 50-56.

BOARD et al. discloses a detection system for a foreign object in order to detect and analyze ultrasound or stress waves emitted when an object enters the intake of a turbine engine and subsequently impacts one or more of the blades in the engine (See Abstract). This is not directed towards a fan blade containment system, although it may be used to detect "foreign object damage events within turbine engines (Column 3 lines 46-49). The stress wave signal is amplified and passed through a threshold filter (gain and band pass filtering) so that only high magnitude signals (from 20 KHz and up) are retained (Column 2 lines 22-34). Thus, it is the magnitude, and not the rate of change of a variable of interest, that governs the data points that are processed. Therefore, BOARD et al. fails to teach or disclose all the features of independent claims 1, 9, 17 and 25, upon which claims 6, 14, 22 and 30 depend. From the above arguments, the present invention is believed non-obvious and inventive over the prior art since none of the references, either alone or in any combination thereof, disclose all the features of independent claims 1, 9, 17 and 25.

Claims 22 and 30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over ATSUMI et al. in view of BOARD et al. For reasons indicated in the above paragraph, the combination of ATSUMI et al. and BOARD et al. fail to teach or suggest the present invention as claimed in any one of independent claims 1, 9, 17 and 25.

Claims 33-36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over ATSUMI et al. in view of TSAP et al. and in further view of U.S. Patent 5,640,462 (SATO et al.). As argued above, ATSUMI et al. and TSAP et al., either alone or in combination, fail to disclose or teach all the limitations of

any one of independent claims 1, 9, 17 and 25. The Examiner states SATO et al. discloses selecting the most significant cross-sectional views, wherein said most significant cross-sectional views contain at least one of a stress, deformation rate or other variable above a threshold at Column 9 lines 38-43. SATO et al. discloses an imaging method using X-ray computerized tomography to (1) reconstruct a partial region including a region of interest (ROI), (2) extract shape information from reconstructed image, (3) setting a threshold function determined by the reconstructed image information (equivalent to density), (4) extracting the reconstructed image by making the information into bi-values or tri-values based on threshold function, and (5) extracting and imaging only a portion of the image where the linear absorption coefficient distribution changes step-wise (See Abstract). The measuring object is first fully reproduced in a low resolution and then subsequently the ROI of the measuring object is reproduced in a finer detail image at a single point in time image (Column 5 line 58 to Column 6 line 5). SATO et al. fails to suggest, teach or disclose a time-dependent alteration. Therefore, the analyzed data set does not have a data compression technique applied to it. In SATO et al., the ROI imaged is simply circumscribed or restricted before being reproduced in finer detail. There is no teaching in SATO et al. to seek a method of compressing data. Thus, SATO et al. fails to teach or disclose the present invention as currently claimed.

Furthermore, there is no teaching or motivation to combine ATSUMI et al., TSAP et al. and SATO et al. to obtain the present invention, as claimed in claims 33-36, as these references are all directed to differing fields of technology.

Entry of this amendment is solicited, is believed appropriate, and is believed to distinguish the invention from the cited references. For the foregoing reasons, reconsideration and allowance are believed in order and are solicited.

Respectfully submitted,

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